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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/805,810   | 03/22/2004  | Tooru Arai           | SZIZ 2 00029        | 9963             |
| 27885  | 7590        | 04/06/2006           | EXAMINER            |                  |
| FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP<br>1100 SUPERIOR AVENUE, SEVENTH FLOOR<br>CLEVELAND, OH 44114 |             |                      | TON, TRI T          |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2877                |                  |

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                    |  |
|------------------------------|--------------------------------------|------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/805,810 | <b>Applicant(s)</b><br>ARAI, TOORU |  |
|                              | <b>Examiner</b><br>Tri T. Ton        | <b>Art Unit</b><br>2877            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>04/19/04&amp;10/27/04</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 04/19/04 and 10/27/04 have been entered. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Oath/Declaration***

3. The Oath and Declaration filed on 03/22/2004 is acceptable.

### ***Drawings***

4. New corrected drawing in compliance with 37 CFR 1.121(d) is required in this application because front view (Figure 1 and 3) is not correct. Front view is mixed with cross view section. On the partial cross section side view (Figure 2 and Figure 4) must have arrow and line to show where mixed front cross view section is (Figure 1 and Figure 3). On front view section, drive-side flange (Figure 2 element 52 and Figure 4 element 12) covers load-side flange (Figure 2 element 54 and Figure 4 element 14),

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therefore, all hidden elements such as light emitting elements and chamber that carries these light emitting elements on the side of load-side flange must be thin dashed lines instead of solid lines. Outline of cross section figures must be solid bold line, outline of view section figures must be solid thin line, and outline of hidden section figures must be in thin dashed line. There must be a line dividing view section and cross section in partial cross section side view (Figure 4). Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

### ***Double Patenting***

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1, 2 and 3 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,907,794 B2 (Tooru) in view of Horton (U.S. Patent No. 6,800,843 B2), Eisenhower et al. (U.S. Patent No. 6,624,900 B1) and Yamaga (J.P. 06075118). Although the conflicting claims are not identical, they are not patentably distinct from each other because anticipates the claimed invention as followed:

As to claims 1 and 2, Tooru (U.S. Patent No. 6,907,794 B2) teaches all the features of the current invention except for the use of diffusion plate. Horton teaches a torque sensor consisting of a light source combination with a diffuser provided in front of the light source for diffusing light (column 4, lines 27-29). It would have been obvious to one having ordinary skill in the art at the time of invention was made to include in Tooru a diffusion plate taught by Horton for the purpose of diffusing and transmitting optical signals. Thus, the uniformity of light is attained.

As to claim 1, Tooru (U.S. Patent No. 6,907,794 B2) teaches all the features of the current invention except for the use of light receiving fiber. Eisenhower et al. teaches fiber optic technology may be employed for receiving the optical signals (column 3, lines 10-13). It would have been obvious to one having ordinary skill in the art at the time of invention was made to include in Tooru a light receiving fiber for receiving the optical signals. Thus, minimize optical losses.

As to claim 3, Tooru (U.S. Patent No. 6,907,794 B2) teaches all the features of the current invention except for the use of a diffusion layer disposed on a surface of the light receiving fiber. Yamaga teaches diffusion layer coated on optical fiber cable makes light emission expression without the unequal ness (Abstract, lines 5, 11-14). It would have been obvious to one having ordinary skill in the art at the time of invention was made to include in Tooru a diffusion layer disposed on a surface of the light receiving fiber in order to make elegant light emission. Thus efficient receiving of light is attained.

7. Claim 4 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,907,794 B2 (Tooru) in view of Eisenhower et al. (U.S. Patent No. 6,624,900 B1). Although the conflicting claims are not identical, they are not patentably distinct from each other because anticipates the claimed invention as followed:

As to claim 4, Tooru (U.S. Patent No. 6,907,794 B2) teaches all the features of the current invention except for the use of light guiding plate. Eisenhower et al. teaches light guides (column 3, lines 8-13) may be used to convey light to the movable surface(s). It would have been obvious to one having ordinary skill in the art at the time of invention was made to include in Tooru a light guiding plate for receiving and conveying the optical signals. Thus, minimizing optical losses and efficient receiving of light is attained.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nondahl et al. (U.S. Patent No. 6,504,275) in view of Horton (U.S. Patent No. 6,800,843 B2), Eisenhauer et al. (U.S. Patent No. 6,624,900 B1) and Yamaga (J.P. 06075118).

As to claims 1 and 2, Nondahl et al. teaches a torque measuring apparatus with a rotor 16 having a hollow body portion on a shaft 18 (column 3, lines 32-34), (Figures 1A and Figure 1B), light emitting elements 36, 76 disposed on the rotor 16 (column 3, lines 43-45, lines 50-53), (column 6, lines 39-53), (Figure 4), for emitting optical signals based on an output from a torque detection unit arranged on a hollow portion of the hollow body portion (column 6, lines 39-60), a chassis (platform supporting electric motor 10 as seen in Figure 1A), and a signal receiving unit 40 (column 3, lines 41-46), (Figure 2). However, Nondahl et al. does not teach using diffusion plates for diffusing optical signals and light receiving fiber for receiving the optical signals.

Horton teaches a torque sensor consisting of a light source combination with a diffuser provided in front of the light source used for diffusing light (column 4, lines 27-29). It would have been obvious to one having ordinary skill in the art at the

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time of invention was made to modify Nondahl et al. with the teachings of Horton to include diffusion plate for diffusing and transmitting optical signals. Thus, the uniformity of light is attained.

Eisenhauer et al. teaches an optical sensor consisting of fiber optic technology for receiving the optical signals (column 3, lines 10-13). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Nondahl et al. with the teachings of Eisenhauer et al. to include a light receiving fiber attached to a chassis disposed outside the rotor, for receiving the optical signals. Thus, minimize optical losses.

As to claim 3, (see column 4, lines 27-29 of Horton for diffusing light), Yamaga teaches diffusion layer coated on optical fiber cable makes light emission expression without the unevenness (Abstract, lines 5, 11-14). It would have been obvious to one having ordinary skill in the art at the time of invention was made to replace a diffuser of Horton by a diffusion layer disposed on a surface of the light receiving fiber of Yamaga because they would function in the same manner.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nondahl et al. (U.S. Patent No. 6,504,275) in view of Eisenhauer et al. (U.S. Patent No. 6,624,900 B1).

As to claim 4 Nondahl et al. teaches a torque measuring apparatus has all the current invention are stated above except light guiding plate. Eisenhauer et al. teaches light guides (column 3, lines 8-13) may be used to convey light to the movable



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surface(s). It would have been obvious to one having ordinary skill in the art at the time of invention was made to modify Nondahl et al. with the teachings of Eisenhauer et al. to include light guiding plate to be used for receiving and conveying the optical signals. Thus minimizing optical losses and efficient receiving of light is attained.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references of Tooru (U.S. Patent No. 6,907,794 B2), Eisenhauer et al. (U.S. Patent No. 6,624,900 B1) and Horton (U.S. Patent No. 6,800,843 B2) teach of various features similar to the claimed invention.


### ***Fax/Telephone Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri T. Ton whose telephone number is (571) 272-9064. The examiner can normally be reached on 8:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



March 29, 2006  
Examiner Tri Ton/SN



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